



Visual Landscape Assessment : A method for analysing and planning for landscape structure

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Abstract

The landscape is an important national resource an outstanding natural and cultural inheritance which is widely appreciated. This study attempts to evaluate visual landscape of Taiping District in relations to the larger landscape scale in Peninsular Malaysia. A Landscape Character Assessment was conducted on the visual landscape taken for several points in Taiping, Perak and surrounding area to see changes in the landscape. The aim of this study is to provide a visual structure for landscape classification of the Taiping District area that will contribute to the decision making in development and management in Malaysia. It is important to ensure the opportunity was taken during district planning processes.

Keywords: Landscape character assessment, visual landscape, landscape structure.

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1.0 Introduction

In Malaysia, there is no systematic planning tool available to describe, classify, evaluate and predict a location or resulting pattern on existing landscape (Samat, 2009). The existing physical planning in Malaysia has no direct integration process with the visual landscape character distinctiveness. Also, resource and element of landscapes in Malaysia have not been given due attention and recognition holistically. Failure to descriptively describe the landscape characters has resulted in less understanding of the landscape in this country.

Landscape Character Assessment Act is a helpful tool for natural resources protection. For example in South Korea, studies demonstrate the collection and systematically analyse data to identify a landscape character and to establish their landscape characters. The landscape character was considered as a distinctive characteristic regarding physiographic, biogeography, ecological heritage, cultural pattern and recreational potential.

Landscape Character Assessment evaluates landscape character conditions emphasising on the major changes of the study area. In this landscape character assessment exercise, protection and enhancement of landscape play important roles, as these support biodiversity and have important environmental, economic and social functions for the human population (Forman, 1995; Selman, 2000). A visual landscape character assessment was conducted to evaluate the strength and describe the visual sensitivity, unity and quality of Taiping before any decision-making process.

2.0 Literature Review

The landscape is understood as an area, as perceived by people, whose character is the result of the action and interaction of natural and or human factors (European Landscape Convention, 2000). A combination of a human relationship with the existence of natural characters and elements in a landscape is known as a landscape character. Landscape character can be defined as a distinct, recognisable and consistent pattern of elements in the landscape. One landscape different from another, rather than better or worse, and also rates essentially, landscape character is that which makes an area unique (Swanwick, 2002). In other words, it is understood that arises from the particular pattern of the different components combinations that can provide a sense of place to our surroundings (The Countryside Agency, 2005).

Landscape Character Assessment (LCA) is an indicator or integrated solution that effectively identified in the planning, development and management of the landscape. Essentially, Landscape Character Assessment (LCA) can be defined as a way to identify what makes a place unique and can serve as a framework for decision-making that respects naturalness. It also provides a mechanism by which local communities and stakeholders can contribute towards the decisions that affect their local surroundings (European Landscape Convention, 2000). It is also described as a distinct and recognisable pattern of elements that occur consistently in a particular type of landscape (Swanwick, 2004).

Each landscape elements were forming components and structures whose character is the result of the action and interaction of natural and/or human factors (European Landscape Convention, 2011). In previous studies, the purpose of this assessment is basically to protect,

manage and develop the landscape (Devon County Council, 2002).

All European Union countries have conducted their assessment of landscape character (Fáilte Ireland, 2007). However, most of the countries in Asia, especially in South-East Asia were not exposed to the landscape character assessment approach. Only a few Asian countries such as Hong Kong and South Korea emulate the EU countries by establishing an assessment for the landscape character to preserve, conserve and control the landscape changes.

3.0 Methodology

This study used the landscape character assessment methods developed in Europe and adapted it to the phenomenon, situation, and condition in Malaysia. This study combined the GIS method and the field survey as it was the practical solution for landscape characterization (Brabyn, 2005).

Information on landform and land cover was obtained using GIS. The results produce the landform map and land cover map. The topographic map and slope map were overlaid to produce a landform map. Meanwhile, the land cover map was obtained using the satellite images by analysing attributes such as the land vegetation cover (agriculture, forest, mix agriculture and commodity crops) and built environment land cover (settlement, industry, urban, suburban, village and commercial). The land cover map contains the land cover information that occurs in the study area. Finally, the landform map was overlaid with the land cover map to produce the preliminary landscape character of the study area.

Field survey is a ground truthing approach to record information and photographs the actual landscape character to test and certify the preliminary character of the landscape. This field data is to get the intensity of landscape character area by assessing the visual landscapes that include Visual Sensitivity, Visual Unity and Visual Quality. An assessment form was developed based on criteria such as elements (diversity of landscape on the level of the element), characteristics (shape level as the expression of the individuality of the landscape) and character (as the holistic impression of space) (Jessel, 2006).

4.0 Results and Discussion

In this study, 4 (four) different landscape character types were proposed for the Taiping area (Figure. 1).

4.1 Result of Visual Landscape Character

The Visual Landscape Character assessed in this study includes the Visual Sensitivity, Visual Unity, and Visual Quality. (Table 1, Table 2 and Table 3).

a) Visual Sensitivity – Distance Zone

Visual sensitivity analysis was used to determine a model that can be viewed from different perspectives. It distinguished visual hierarchy known as the distance zone consisting of a foreground, middle ground and background. Methodologies based on the following criteria:



Figure 1: Landscape Character Map
(Source: Author, 2016)

Table 1: Definition of Visual Sensitivity Attribute for Taiping

Visibility	Criteria	Distance
Foreground	A clearest and have a strong influence on the type of landscape (Mass agriculture scale at undulating land) that is valued in Taiping. In the top of the mountain, the foreground is natural (Natural at Highland). 0 – 2 km	0 – 2 km
Middleground	Simple view is clear and has some influence on the type of landscape that is valued. The area is in the middle of the Taiping. It is dominant of mass agriculture at foothills.	2 – 5 km
Background	No clear view has any influence on the type of landscape that is valued. Visual distance is far away and only can see the monochrome landscape character in Taiping.	>5 km

(Source: Author, 2016)

b) Visual Unity

Visual unity based on the criteria in the following table:

Table 2: Definition of Visual Unity Attribute for Taiping

Visual Unity	Criteria
Harmonized	Observers can see a dynamic and high rate of visual Unity when each component in the landscape in balanced merges. It is included the natural character of Taiping. That visual is harmonised with the natural character.
Clarity	Observers can see each element in the composition of the landscape with clear and distinct. In is clearly identify the physical landscape character in Taiping especially at Banjaran Titiwangsa (Natural Area at Highland, Mass Agricultural Scale at Undulating Land, Mixed Agricultural and Settlement of Undulating Land and Urban and Settlement at Lowland)
Uniqueness	Observers can see each element in the composition and unique landscapes in the area. In Taiping, the uniqueness of this area is the view of a natural area and the setting of mass agriculture.

(Source: Author, 2016)

c) Visual Quality

Visual quality methods such as the following table.

Table 3: Rating and Definition of Visual Quality Attribute for Taiping

MAIN FACTOR	RATING SCORE CRITERIA		
	HIGH(3)	MODERATE (2)	LOW (1)
1. Landform	Dominant terrain, unique and an attractive view (slopes are steep, vertical hills, large rock outcrop or interesting landform)	Landform with interesting features, but less dominant	Landform that is not interesting without the characteristics of an attractive landscape. (wavy, low or flat)
2. Vegetation Land Cover	Have a diversity of vegetation regarding species, colours, natural, agriculture and sizes	Part of the diversity of species, colours and sizes which are dominated by one or two types of plants	Few or no diversity of plant
3. Settlement	Views of the settlement in harmony with the environment (villages)	View of settlement in harmony with surrounding moderate	Views of the settlement chaos and not in harmony with the environment
4. Views of the Adjacent	Views about which improve the quality of the overall view	Views about the medium affects the sight of the whole area	No effect of view about the quality of visual

(Source: Author,2016)

Table 4: Rating for Evaluation Visual Quality Attribute in Landscape Character for Taiping

Value	Criteria	Justification
HIGH	The area has a high value of visual sensitivity, visual unity and visual quality.	The existence of a high visual sensitivity, visual Unity and quality visual landscape that makes the area interesting landscape and help to the distinctive landscape character.
MODERATE	The area has a moderate value of visual sensitivity, visual quality and visual Unity.	The existence of visual sensitivity, visual quality and visual Unity the landscape that moderation.
LOW	The area has a low value of visual sensitivity, visual quality and visual Unity.	The existence of visual sensitivity, visual quality and visual Unity the landscape that low.

(Source: Author,2016)

d) Overall Result Landscape Character Strengths Evaluation

Results of this assessment were to view the strength of a landscape character regarding Visual Sensitivity, Visual Quality and Visual Unity. Areas with high visual value will have an opportunity to be of high potential areas as areas of distinctive landscape character. Analysis of character is the relationship of human perception and attitude towards the visual environment. Mental entities play a major role in providing significant value to the strength/weakness of the landscape's character through visual and aesthetic dimensions.

Table 5: Interpretation/justification for the strength of landscape character

Factor	Interpretation
Visual sensitivity	Evaluate the foreground, middle ground and background to interpret the visual structure of the scene. The area included in the view that close to the observer is considered in the high visual sensitivity and the sensitivity will be reduced for the area (zone) middle and back. It clearly identifies and classifies foreground, middle ground and background view for Taiping (see Image 1 and 2). This image is clearly identified view from highland to lowland and lowland to highland.
Visual unity	Evaluate and rank the visual unity aesthetic elements in the area/landscape regarding visual harmony, clarity of the natural order and man-made components (culture) and the unique elements of the existing or to exist in Taiping. Natural vegetative and agricultural vegetative is a dominant visual harmony, clarity and uniqueness for this study area.
Visual Quality	Visual quality assessment includes the process of determining the value of the beauty of the landscape environment (scenic), the image of the landscape regarding the order of observation elements and the natural and cultural components. Taiping is more greenery area including natural and agriculture. There are some settlement areas in the foothills and villages, but it still blends with nature. The landform of the study area can clearly identify, and views of the adjacent harmonise with the area.

(Source: Author,2016)

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